## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:       )
     MICHAEL WEILAND et al.   )
                        )
                        )  Group:  3663

Serial No. 10/620,732     )

                        )  Examiner:

Title:  METHOD OF REPRESENTING   )       TUAN C. TO
      ROAD LANES           )
                        )

Filed:  July 16, 2003

## APPEAL BRIEF

This appeal brief is submitted pursuant to 37 CFR 41.37.  This is an appeal of the final <u>Office Action</u> dated October 31, 2007.  A <u>Notice of Appeal</u> was timely filed with a <u>Petition for Extension of Time</u> on February 11, 2008.

**(1)    REAL PARTY IN INTEREST**

The real party in interest is NAVTEQ North America, LLC (formerly named Navigation Technologies Corporation), a publicly-traded corporation that has its headquarters in Chicago, Illinois.

**(2)    RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

**(3) STATUS OF CLAIMS**

Claims 1-21 are pending.

Claim 13 was withdrawn by the Examiner.

Claims 1-12 and 14-21 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Pat. No. 5,902,350 ("Tamai").

Claims 1-12 and 14-21 have been appealed.

**(4) STATUS OF AMENDMENTS**

An amendment was filed subsequent to the final rejection to correct minor errors in the drawings.

**(5) SUMMARY OF CLAIMED SUBJECT MATTER**

Appellant's independent Claim 1 relates to a method for representing lanes with a road database (60 in FIGS. 2 and 3; page 5, lines 25-29). The method of Appellant's Claim 1 includes the step of storing in the road database (60 in FIGS. 2 and 3; page 5, lines 25-29) data representations (90 in FIG. 3; page 8, lines 6-11) of physical road lanes (18, 20, 22, 24, 28, 30 and 34 in FIG. 1; 122 in FIG. 5; page 4, lines 13-24; page 11, lines 6-20). The method of Appellant's Claim 1 also includes the step of associating with each data representation (90 in FIG. 3; page 8, lines 6-11) of a physical road lane (18, 20, 22, 24, 28, 30, and 34 in FIG. 1; 122 in FIG. 5) two types of data. These two types of data include (1) data indicating start and end points (START PT and END PT in 90 in FIG. 3; page 8, lines 6-11) of the represented physical road lane, and (2) data (140 in FIG. 3; page 12, lines 1-16) indicating what linearly extending physical features (FIG. 5) are

adjacent to and extend along the represented physical road lane (18, 20, 22, 24, 28, 30, and 34 in FIG. 1; 122 in FIG. 5) on a right side and a left side thereof.

Appellant's independent Claim 17 relates to a method for representing lanes with a road database (60 in FIGS. 2 and 3; page 5, lines 25-29). The method of Appellant's Claim 17 includes the step of storing in the road database (60 in FIGS. 2 and 3; page 5, lines 25-29) data representations (90 in FIG. 3; page 8, lines 6-11) of physical road lanes (18, 20, 22, 24, 28, 30 and 34 in FIG. 1, 122 in FIG. 5, page 4, lines 13-24; page 11, lines 6-20). The method of Appellant's Claim 17 also includes the step of associating with each data representation (90 in FIG. 3; page 8, lines 6-11) of a physical road lane (18, 20, 22, 24, 28, 30, and 34 in FIG. 1; 122 in FIG. 5) data indicating start and end points (START PT and END PT in 90 in FIG. 3; page 8, lines 6-11) of the represented physical road lane. The method of Appellant's Claim 17 also includes the step of associating with at least some data representations (90 in FIG. 3; page 8, lines 6-11) of physical road lanes data (116 in FIG. 3; 131 in FIG. 5; page 10, line 27-page 11, line 20) indicating a sublane (128 in FIG. 5; page 11, lines 6-20) of the represented physical road lane (122 in FIG. 5), wherein the data (116 in FIG. 3; 131 in FIG. 5; page 10, line 27-page 11, line 20) indicating a sublane (128 in FIG. 5) include data indicating start and end points (START PT and END PT in 116 in FIG. 3 and 131 in FIG. 5; page 10, line 27-page 11, line 5) of the represented sublane (128 in FIG. 5), wherein the data indicating start and end points (START PT and END PT in 116 in FIG. 3 and in 131 FIG. 5) of the represented sublane (128 in FIG. 5) are defined relative to an end (LANEPOINT in FIG. 3; page 10, line 27-page 11, line 5) of the physical road lane (122 in FIG. 5) of which the sublane (128 in FIG. 5) is a part.

**(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

At issue is whether Appellant's Claims 1-12 and 14-21 are anticipated by U.S. Pat. No. 5,902,350 ("Tamai").

**(7) ARGUMENT[1]**

**A.    Claim 1**

Appellant's independent Claim 1 relates to a method for representing lanes with a road database. According to Appellant's Claim 1, the method includes the steps of *"storing . . . data representations of physical road lanes"* and then *"associating"* each *"data representation of a physical road lane"* with *"data"* that indicates the *"start and end points"* of the *"represented physical road lane"* and *"data"* that indicates *"what linearly extending physical features are adjacent to and extend along the represented physical road lane on a right side and a left side thereof."*

In the final Office Action, Appellant's independent Claim 1 was rejected as anticipated by U.S. Pat. No. 5,902,350 ("Tamai").

The rejection of Appellant's Claim 1 is in error and should be reversed because Tamai fails to disclose three limitations of the claim, specifically (1) *"data representations of physical road lanes,"* (2) *"data"* that indicates the *"start and end points"* of the *"represented physical road lane"* and (3) *"data"* that indicates *"what linearly extending physical features are adjacent to and extend along the represented physical road lane on a right side and a left side thereof."*

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[1] Pursuant to 37 CFR § 41.37(c)(1)(vii), this Argument includes twenty subheadings that organize the appealed claims into separate groups to which different grounds of patentability apply. Appellant requests that the patentability of each group be considered separately, as permitted by 37 CFR § 41.37(c)(1)(vii).

Tamai relates to a way to provide maneuvering instructions with a navigation system. According to Tamai, the maneuvering instructions provided by prior navigation systems are sometimes confusing due to the way the system's maneuvering program interprets an intersection of roads as represented by data contained in the database of map information used by the navigation system. To illustrate the problem, Tamai provides several examples showing types of <u>actual</u> road intersections where confusing instructions are sometimes provided. Then, Tamai also shows how these actual road intersections are represented using the data contained in the database 306 of map information used by a navigation system.

The following table shows the relationship between the figures in Tamai that illustrate actual road intersections and the corresponding figures that illustrate how these intersections are represented in the database used by the Tamai navigation system.

Tamai

| FIGS. OF ACTUAL ROAD INTERSECTIONS | FIGS. SHOWING REPRESENTATION IN DATABASE 306 FIGS. |
|---|---|
| 1a | 1b |
| 2a | 2b |
| 3a | 3b |
| 4a | 4b. |
| 11a | 11b |
| 13a | 13b |
| 13c | 13d |

For the sake of illustration, FIGS. 2a and 2b from Tamai are shown below. The other figures from Tamai are similar.
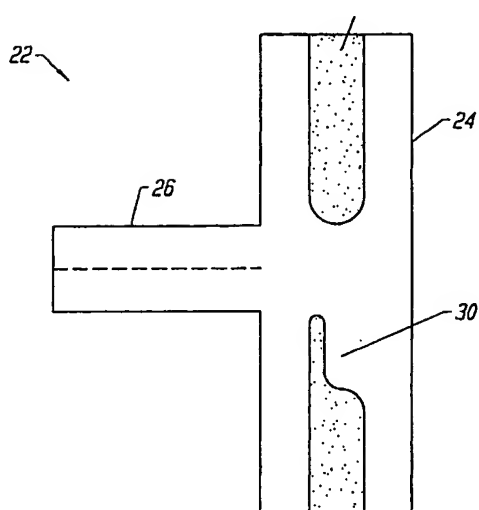
TAMAI

ACTUAL ROAD
INTERSECTION

HOW INTERSECTION
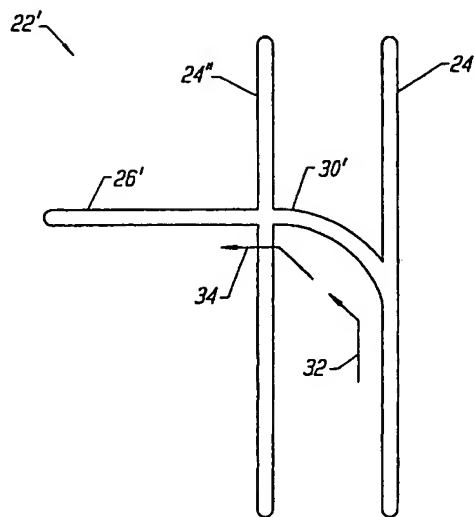IS REPRESENTED IN
DATABASE 306

FIG. 2a

FIG. 2b

As shown above in Tamai FIG. 2a, the actual intersection 22 includes a left turn lane 30. However, the Tamai database 306 does not represent lanes as such. Instead, the Tamai database 306 represents the actual lane 30 as a road segment 30' (as shown in Tamai FIG. 2b). According to Tamai, this can lead to confusing "double" maneuvering instructions. To address this kind of problem, Tamai discloses new software routines to be used by the navigation system that analyze certain properties of the road segments that make up the intersections as they are represented in the database of map information in

order to modify how route guidance maneuvering instructions are provided (Tamai: FIGS. 6-8, 10 and 14).

In reaching the conclusion that Tamai anticipated Appellant's claims, Examiner To misinterpreted Tamai. Examiner To relied entirely on those figures from Tamai (i.e., FIGS. 1a, 2a, 3a, 4a, 11a, 13a, and 13c) in the left column in the table above that showed actual road intersections. This was plainly incorrect. Tamai explicitly explains that what is contained in the database 306 used by the navigation system is shown in FIGS. 1b, 2b, 3b, 4b, 11b, 13b, and 13d (i.e., the right column in the table above), and not in FIGS. 1a, 2a, 3a, 4a, 11a, 13a, and 13c (i.e., the left column in the table above).

It follows from the foregoing that Tamai does not disclose a *"road database"* in which are stored *"data representations of physical road lanes,"* as recited in Appellant's Claim 1. Instead, the Tamai database stores data that represent road segments (e.g., 30' in FIG. 2b, above) and not the lanes that make up road segments. This distinction is important and is in fact the very problem addressed by the Tamai patent. Because Tamai does not disclose that road lanes as such are represented in the database used by the navigation system, Tamai developed new routines (Tamai: FIGS. 6-8) to determine when the properties of road segments indicate that they might actually be merely lanes. Because Tamai does not disclose a *"road database"* in which are stored *"data representations of physical road lanes,"* as recited in Appellant's Claim 1, Appellant's Claim 1 is not anticipated by Tamai.

As stated above, this is not the only limitation of Applicant's Claim 1 that is not disclosed by Tamai. Tamai also fails to disclose *"data"* that indicates *"what linearly extending physical features are adjacent to and extend along the represented physical*

*road lane on a right side and a left side thereof."* Assuming *arguendo* that some of the road segment data in the Tamai database represents physical road lanes (even if they are not identified as such), Tamai fails to disclose that the database 306 contains information that indicates what is adjacent to and extends along a represented physical road segment on a right and left side thereof. The contents of the Tamai database include various characteristics of roads and places on a map (Tamai: column 5, lines 42-55 and column 7, lines 44-47). However, Tamai fails to disclose that the database contains data that indicates *"what linearly extending physical features are adjacent to and extend along the represented physical road lane on a right side and a left side thereof"*, as recited in Appellant's Claim 1.

For this additional reason, Tamai fails to anticipate Appellant's Claim 1.

### B.   Claim 2

Appellant's Claim 2 depends from independent base Claim 1 and further recites that the *"data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane"* in Claim 1 *"indicate that another physical road lane is located adjacent to the represented road lane on a specified side thereof and that said another physical road lane can be entered by a lane change from said represented physical road lane"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 2 was rejected as anticipated by Tamai.

Tamai has no disclosure whatsoever about whether a physical road lane can be entered by a *"lane change"* from another lane. Accordingly, in addition to the reasons

why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 2 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 2, i.e., *"data"* that *"indicate . . . another physical road lane can be entered by a lane change from said represented physical road lane."*

## C. Claim 3

Appellant's Claim 3 depends from independent base Claim 1 and further recites that the *"data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane"* in Claim 1 *"indicate that another physical road lane is located adjacent to the represented road lane on a specified side thereof and that said another physical road lane cannot be entered by a lane change from said represented physical road lane"* [Emphasis added].

In the final Office Action, Appellant's dependent Claim 3 was rejected as anticipated by Tamai.

As explained above in connection with Claim 2, Tamai has no disclosure whatsoever about whether a physical road lane can be entered by a *"lane change"* from another lane. Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 3 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 3, i.e., *"data"* that *"indicate . . . another physical road lane cannot be entered by a lane change from said represented physical road lane."*

## D.   Claim 4

Appellant's Claim 4 depends from independent base Claim 1 and further recites that the *"data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane"* in Claim 1 *"indicate that a physical road lane of less than full width is present on a specified side thereof, wherein said physical road lane of less than full width becomes a physical road lane of full width immediately ahead in a direction of travel of the physical road lane"* [Emphasis added].

In the final Office Action, Appellant's dependent Claim 4 was rejected as anticipated by Tamai.

Tamai has no disclosure about whether a physical road lane of less than full width is present or where such a lane might become a lane of full width. Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 4 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 4, i.e., *"data"* that *"indicate that a physical road lane of less than full width is present on a specified side thereof"* and that the *"physical road lane of less than full width becomes a physical road lane of full width immediately ahead in a direction of travel of the physical road lane."*

## E.   Claim 5

Appellant's Claim 5 depends from independent base Claim 1 and further recites that the *"data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane"* in Claim 1 *"indicate a physical road lane of less than full width is present on a specified side thereof, wherein said physical*

*road lane of less than full width <u>ends entirely immediately ahead in a direction of travel</u> <u>of the physical road lane</u>"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 5 was rejected as anticipated by Tamai.

As explained above in connection with Claim 4, Tamai has no disclosure about whether a physical road lane of less than full width is present or where such a lane might end. Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 5 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 5, i.e., *"data"* that *"indicate that a physical road lane of <u>less than full width</u> is present on a specified side thereof"* and that *"indicate a physical road lane of <u>less than full width</u> is present on a specified side thereof, wherein said physical road lane of less than full width <u>ends</u> <u>entirely immediately ahead in a direction of travel of the physical road lane</u>."*

## F.    <u>Claim 6</u>

Appellant's Claim 6 depends from independent base Claim 1 and further recites that the *"data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane"* in Claim 1 *"indicate that a <u>shoulder</u> is located adjacent to the represented road lane on a specified side thereof"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 6 was rejected as anticipated by Tamai.

- 11 -

Tamai has no disclosure about *"shoulders."* Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 6 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 6, i.e., *"data"* that *"indicate that a shoulder is located adjacent to the represented road lane on a specified side thereof."*

### G.    Claim 7

Appellant's Claim 7 depends from independent base Claim 1 and further recites that the *"data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane"* in Claim 1 *"indicate that another drivable surface is located adjacent to the represented road lane on a specified side thereof"* [Emphasis added].

In the final Office Action, Appellant's dependent Claim 7 was rejected as anticipated by Tamai.

Tamai has no disclosure about whether *"surfaces"* located adjacent to lanes are *"drivable."* Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 7 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 7, i.e., *"data"* that *"indicate that another drivable surface is located adjacent to the represented road lane on a specified side thereof."*

## H.    Claim 8

Appellant's Claim 8 depends from independent base Claim 1 and further recites that the *"data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane"* in Claim 1 *"indicate that <u>no drivable surface</u> is located adjacent to the represented road lane on a specified side thereof"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 8 was rejected as anticipated by Tamai.

As explained above in connection with Claim 7, Tamai has no disclosure about whether surfaces located adjacent to lanes are *"drivable."* Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 8 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 8, i.e., *"data"* that *"indicate that <u>no drivable surface</u> is located adjacent to the represented road lane on a specified side thereof."*

## I.    Claim 9

Appellant's Claim 9 depends from independent base Claim 1 and further recites the step of *"associating . . . data indicating a sublane of the represented physical road lane"* with some of the *"data representations of physical road lanes"* in Claim 1. According to Claim 9, the *"sublane"* data includes *"data indicating <u>start and end points</u> of the represented sublane, wherein the data indicating start and end points of the represented sublane are defined <u>relative to an end of the physical road lane of which the sublane is a part</u>"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 9 was rejected as anticipated by Tamai.

Tamai has no disclosure about *"sublanes."* It follows therefore that Tamai likewise fails to disclose that start or end points of a *"sublane"* are defined relative to a feature, e.g., the *"end,"* of a road lane. Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 9 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 9, i.e., the step of *"associating . . . data indicating a sublane of the represented physical road lane"* with some of the *"data representations of physical road lanes"* and *"data indicating <u>start and end points</u> of the represented sublane, wherein the data indicating start and end points of the represented sublane are defined <u>relative to an end of the physical road lane of which the sublane is a part.</u>"*

## J.     <u>Claim 10</u>

Appellant's Claim 10 depends from independent base Claim 1 and further recites the step of *"associating . . . data indicating <u>multiple sublanes</u> of the represented physical road lane"* with some of the *"data representations of physical road lanes"* in Claim 1. According to Claim 10, *"sublane"* data for each of the *"multiple sublanes"* includes *"data indicating <u>start and end points</u> of the represented sublane, wherein the data indicating start and end points of the represented sublane are defined <u>relative to an end of the physical road lane of which the sublane is a part</u>"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 10 was rejected as anticipated by Tamai.

As explained above in connection with Claim 9, Tamai has no disclosure about *"sublanes."* It follows therefore that Tamai likewise fails to disclose the limitations of Claim 10 that relate to data representations of *"multiple sublanes."* Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 10 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 10, i.e., the step of *"associating . . . data indicating multiple sublanes of the represented physical road lane"* with some of the *"data representations of physical road lanes"* and *"data indicating start and end points of the represented sublane, wherein the data indicating start and end points of the represented sublane are defined relative to an end of the physical road lane of which the sublane is a part."*

### K.     Claim 11

Appellant's Claim 11 depends from independent base Claim 10 and further recites that *"some of the sublanes"* in Claim 10 *"overlap."*

In the final <u>Office Action</u>, Appellant's dependent Claim 11 was rejected as anticipated by Tamai.

As explained above in connection with Claim 10, Tamai has no disclosure about *"sublanes"* or *"multiple sublanes."* Therefore, it follows that Tamai also fails to disclose the limitations of Claim 11 that relate to *"multiple sublanes"* that *"overlap."* Accordingly, in addition to the reasons why Appellant's Claims 1 and 10 are not anticipated by Tamai, Appellant's dependent Claim 11 is not anticipated by Tamai for the

further reason that Tamai fails to disclose the limitation added by Claim 11, i.e., *"multiple sublanes"* that *"overlap."*

## L. Claim 12

Appellant's Claim 12 depends from independent base Claim 1 and adds the step of *"associating"* with each *"data representation of a physical road lane data"* as recited in Claim 1 *"data indicating a geometry of the represented physical road lane"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 12 was rejected as anticipated by Tamai.

As explained above in connection with Claim 1, Tamai has no disclosure about representing physical road lanes so therefore it follows that Tamai likewise fails to disclose anything about representing the *"geometry"* of a *"physical road lane."* Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 12 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitation added by Claim 12, i.e., *"associating . . . data indicating a geometry of the represented physical road lane."*

## M. Claim 14

Appellant's Claim 14 depends from dependent Claim 12 and further recites that the *"geometry of a represented physical road lane"* as recited in Claim 12 *" is represented using a spline"* [Emphasis added].

In the final <u>Office Action</u>, Appellant's dependent Claim 14 was rejected as anticipated by Tamai.

Tamai has no disclosure about *"splines."* Accordingly, in addition to the reasons why Appellant's Claims 1 and 12 are not anticipated by Tamai, Appellant's dependent Claim 14 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitation added by Claim 14, i.e., the *"geometry of a represented physical road lane is represented using a spline."*

### N. Claim 15

Appellant's Claim 15 depends from independent base Claim 1 and further recites that the *"data representation of a physical road lane"* in Claim 1 includes a *"reference to at least one data entity used for navigation-related purposes that represents the road segment of which the physical road lane is a part."*

In the final <u>Office Action</u>, Appellant's dependent Claim 15 was rejected as anticipated by Tamai.

Tamai includes data that represents road segments, but does include data that represents road lanes that make up the road segments. Therefore, Tamai has no disclosure about a *"reference"* between a *"data representation of a physical road lane"* and a *"data entity used for navigation-related purposes that represents the road segment of which the physical road lane is a part."* Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 15 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 15 i.e., a *"reference to at least one data entity used for navigation-*

*related purposes that represents the road segment of which the physical road lane is a part."*

### O. Claim 16

Appellant's Claim 16 depends from independent base Claim 1 and further recites that the *"data representations of physical road lanes"* recited in Claim 1 *"represent lanes that are less than full width as well as lanes of full width."*

In the final Office Action, Appellant's dependent Claim 16 was rejected as anticipated by Tamai.

Tamai has no disclosure about representing *"lanes"* so therefore, Tamai also fails to disclose representing *"lanes that are less than full width"* or *"lanes of full width."* Accordingly, in addition to the reasons why Appellant's base Claim 1 is not anticipated by Tamai, Appellant's dependent Claim 16 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitation added by Claim 16, i.e., *"data"* that *"represent lanes that are less than full width as well as lanes of full width."*

### P. Claim 17

Appellant's Claim 17 is an independent claim that relates to a method for representing lanes with a road database. According to Appellant's Claim 17, the method includes the steps of *"storing . . . data representations of physical road lanes"* and then *"associating with at least some data representations of physical road lanes data indicating a <u>sublane</u> of the represented physical road lane."* Further Appellant's Claim 17 recites that the *"sublane"* data includes *"data indicating start and end points of the*

*represented sublane . . . <u>defined relative to an end</u> of the physical road lane of which the sublane is a part* [Emphasis added].

In the final <u>Office Action</u>, Appellant's independent Claim 17 was rejected as anticipated by Tamai.

As explained above in connection with independent Claim 1, the Tamai database 306 does not include data that represent lanes *per se*. Instead, Tamai uses routines that examine the properties of road segments in order to determine whether a road segment represented in the database might actually be a lane. Accordingly, Appellant's Claim 17 is not anticipated by Tamai because Tamai fails to disclose the step of *"storing . . . data representations of physical road lanes."*

There are additional reasons why Tamai fails to anticipate Appellant's Claim 17. Tamai does not have any disclosure about *"sublanes"* nor does Tamai have any disclosure that a *"sublane"* is *"defined relative to an end of the physical road lane of which the sublane is a part."* For these additional reasons, Tamai fails to anticipate Appellant's independent Claim 17.

## Q.     Claim 18

Appellant's Claim 18 depends from independent base Claim 17 and further recites that the *"data indicating a sublane"* recited in Claim 17 includes *"attributes that take precedence over the same attributes of the represented physical road lane of which the sublane is a part."*

In the final <u>Office Action</u>, Appellant's dependent Claim 18 was rejected as anticipated by Tamai.

As explained above in connection with Claim 17, Tamai has no disclosure about *"sublanes."* Accordingly, Tamai also fails to disclose that *"data indicating a sublane"* includes *"attributes."* Further, Tamai also necessarily fails to disclose that such *"attributes"* of a *"sublane"* will *"take precedence over the same attributes of the represented physical road lane of which the sublane is a part."* Accordingly, in addition to the reasons why Appellant's base Claim 17 is not anticipated by Tamai, Appellant's dependent Claim 18 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 18, i.e., *"data indicating a sublane"* as recited in Claim 17 that includes *"attributes that take precedence over the same attributes of the represented physical road lane of which the sublane is a part."*

### R.     Claim 19

Appellant's Claim 19 depends from independent base Claim 17 and further recites that *"some of the data representations of physical road lanes"* recited in Claim 17 include *"multiple data representations of sublanes associated with a single physical road lane."*

In the final <u>Office Action</u>, Appellant's dependent Claim 19 was rejected as anticipated by Tamai.

As explained above in connection with Claim 17, Tamai has no disclosure about *"sublanes."* Accordingly, Tamai also fails to disclose *"multiple data representations of sublanes associated with a single physical road lane."* Accordingly, in addition to the reasons why Appellant's base Claim 17 is not anticipated by Tamai, Appellant's dependent Claim 19 is not anticipated by Tamai for the further reason that Tamai fails to

disclose the limitations added by Claim 19, i.e., *"multiple data representations of sublanes associated with a single physical road lane."*

### S.    Claim 20

Appellant's Claim 20 depends from dependent Claim 19 and further recites that *"some of the multiple sublanes associated with a single physical"* as recited in Claim 19 *"overlap."*

In the final <u>Office Action</u>, Appellant's dependent Claim 20 was rejected as anticipated by Tamai.

As explained above in connection with Claims 17 and 19, Tamai has no disclosure about *"sublanes"* or *"multiple sublanes."* Therefore, it follows that Tamai also fails to disclose the limitations of dependent Claim 20 that relate to *"multiple sublanes"* that *"overlap."* Accordingly, in addition to the reasons why Appellant's Claims 17 and 19 are not anticipated by Tamai, Appellant's dependent Claim 20 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 20, specifically *"multiple sublanes"* that *"overlap."*

### T.    Claim 21

Appellant's Claim 21 depends from dependent Claim 17 and further recites that *"data representations of physical road lanes"* as recited in Claim 17 *"represent lanes that are less than full width."*
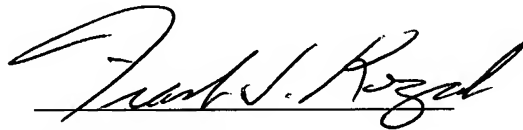
In the final <u>Office Action</u>, Appellant's dependent Claim 21 was rejected as anticipated by Tamai.

Tamai has no disclosure about *"lanes that are less than full width."* Accordingly, in addition to the reasons why independent Appellant's Claim 17 is not anticipated by Tamai, Appellant's dependent Claim 21 is not anticipated by Tamai for the further reason that Tamai fails to disclose the limitations added by Claim 21, i.e., that *"data representations of physical road lanes represent lanes that are less than full width."*

## ARGUMENT SUMMARY AND CONCLUSION

Examiner To's position that Appellant's Claims 1-12 and 14-21 are anticipated by Tamai is in error. The Examiner relied on the wrong figures in Tamai to find the limitations of Appellant's claims. Appellant has shown that Tamai fails to disclose all the limitations of any of Appellant's claims. Accordingly, Appellant respectfully requests the Board to reverse the rejection of Claims 1-12 and 14-21.

Respectfully submitted,

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**(8)     CLAIMS APPENDIX**

1.     A method for representing lanes with a road database comprising:

storing in the road database data representations of physical road lanes; and

associating with each data representation of a physical road lane

> data indicating start and end points of the represented physical road lane;
>
> > and
>
> data indicating what linearly extending physical features are adjacent to
>
> > and extend along the represented physical road lane on a right side
> >
> > and a left side thereof.

2.     The method of Claim 1 wherein the data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane indicate that another physical road lane is located adjacent to the represented road lane on a specified side thereof and that said another physical road lane can be entered by a lane change from said represented physical road lane.

3.     The method of Claim 1 wherein the data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane indicate that another physical road lane is located adjacent to the represented road lane on a specified side thereof and that said another physical road lane cannot be entered by a lane change from said represented physical road lane.

4.      The method of Claim 1 wherein the data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane indicate that a physical road lane of less than full width is present on a specified side thereof, wherein said physical road lane of less than full width becomes a physical road lane of full width immediately ahead in a direction of travel of the physical road lane.

5.      The method of Claim 1 wherein the data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane indicate a physical road lane of less than full width is present on a specified side thereof, wherein said physical road lane of less than full width ends entirely immediately ahead in a direction of travel of the physical road lane.

6.      The method of Claim 1 wherein the data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane indicate that a shoulder is located adjacent to the represented road lane on a specified side thereof.

7.      The method of Claim 1 wherein the data indicating what linearly extending physical features are adjacent to and extend along the represented physical road lane indicate that another drivable surface is located adjacent to the represented road lane on a specified side thereof.

8.      The method of Claim 1 wherein the data indicating what linearly

extending physical features are adjacent to and extend along the represented physical

road lane indicate that no drivable surface is located adjacent to the represented road lane

on a specified side thereof.

9.      The method of Claim 1 further comprising:

associating with at least some data representations of physical road lanes data

indicating a sublane of the represented physical road lane,

wherein the data indicating a sublane include data indicating start and end points

of the represented sublane, wherein the data indicating start and end points of the

represented sublane are defined relative to an end of the physical road lane of which the

sublane is a part.

10.     The method of Claim 1 further comprising:

associating with some data representations of a physical road lane data indicating

multiple sublanes of the represented physical road lane,

wherein each of the multiple sublanes is represented by data indicating start and

end points of the respective associated represented sublane, wherein the data indicating

start and end points of the represented sublane are defined relative to an end of the

respective associated physical road lane of which the sublane is a part.

11.     The method of Claim 10 wherein at least some of the sublanes associated

with some physical road lanes overlap.

12. The method of Claim 1 further comprising:

associating with each data representation of a physical road lane data indicating a geometry of the represented physical road lane.

14. The method of Claim 12 wherein the geometry of a represented physical road lane is represented using a spline.

15. The method of Claim 1 wherein each data representation of a physical road lane further comprises:

a reference to at least one data entity used for navigation-related purposes that represents the road segment of which the physical road lane is a part.

16. The method of Claim 1 wherein the data representations of physical road lanes represent lanes that are less than full width as well as lanes of full width.

17. A method for representing lanes with a road database comprising:

storing in the road database data representations of physical road lanes;

associating with each data representation of a physical road lane data indicating start and end points of the represented physical road lane; and

associating with at least some data representations of physical road lanes data indicating a sublane of the represented physical road lane,

wherein the data indicating a sublane include data indicating start and end points of

the represented sublane, wherein the data indicating start and end points of the

represented sublane are defined relative to an end of the physical road lane of which

the sublane is a part.

18.    The method of Claim 17 wherein the data indicating a sublane include

attributes that take precedence over the same attributes of the represented physical road

lane of which the sublane is a part.

19.    The method of Claim 17 wherein some of the data representations of

physical road lanes have multiple data representations of sublanes associated with a

single physical road lane.

20.    The method of Claim 19 wherein some of the multiple sublanes associated

with a single physical road lane overlap.

21.    The method of Claim 17 wherein the data representations of physical road

lanes represent lanes that are less than full width.

**(9)  EVIDENCE APPENDIX**

There is no evidence to include with this appeal.

**(10)  RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.